

09/995,128

REMARKS

Claims 1-12 are rejected, under 35 U.S.C. § 103, as being unpatentable over Kuchel et al. '309 in view of Takeda et al. '612. The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the following remarks.

The Applicant asserts that Kuchel et al. '309 describes the conventional Moire method. According to the Moire method, at least two pairs of gratings (G_{11}/G_{13} and G_{12}/G_{14}) are provided.

Although the periods of the two pairs of gratings are different—with G_{11}/G_{13} having a period of 25 lines per mm and G_{12}/G_{14} having a period of 25.5 lines per mm—the gratings for each pair (G_{11}/G_{13} and G_{12}/G_{14}) must have the same period. In other words, while the period for gratings G_{11} and G_{13} may be different from the period for gratings G_{12} and G_{14} , grating G_{11} and grating G_{13} must have the same period and 2) grating G_{12} and grating G_{14} must have the same period. Secondly, the gratings of each pair must be arranged exactly parallel to one another in a mechanical manner. If the noted relationships between the pairs of gratings (e.g., G_{11}/G_{13} and G_{12}/G_{14}) is not established, then the device will not operate properly.

The specifically disclosed arrangement according to Kuchel et al '309 is contrary to the presently claimed arrangement of the present invention. According to the presently claimed invention, the periods for the plurality of gratings may or may not be the same. Furthermore, the rotation angle for the gratings are not parallel to one another. That is, they are all different from one another. In view of these differences from the Kuchel et al '309 arrangement, it is still possible to correctly measure a three-dimensional shape with the features of the currently claimed invention.

In order to emphasize the above noted distinctions between the presently claimed invention and the applied art, independent claims 1, 11 and 12 all recite the features of "providing at least three one-dimensional grids of different colors, with each one of the at least three one-dimensional grids of different colors having a different rotation angle from another; projecting the grid patterns, from the at least three one-dimensional grids of different colors,

09/995,128

upon the object to be measured". Such features are believed to clearly and patentably distinguish the presently claimed Invention from all of the art of record, including the applied art.

With respect to the applied citation of Tekeda et al '612, the Applicant acknowledges that this reference may arguably relate to the features noted by the Examiner in the official action. Nevertheless, it is respectfully submitted that Tekeda et al '612 also fails to teach, suggest or in anyway disclose the above distinguishing features of the present invention. Accordingly, the combination of Tekeda et al '612 with Kuchel et al. '309 still fails to render obvious the presently claimed invention.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Kuchel et al. '309 and/or Tekeda et al '612 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

09/995,128

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,


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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being transmitted via facsimile to the United States Patent and Trademark Office on: January 6, 2004



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